Both the species and habitats considered priorities for protection in landscape analysis include a larger set than is typically tracked by Natural Heritage Programs. Large tracts of second-growth hardwoods, which might not contain a single rare species or high-quality natural community, might be given a high value under landscape analysis if they play an important role in supporting viable populations of neotropical migrant songbirds, small carnivores, or large snakes (none of which may be particularly rare). Sites supporting viable populations of a large number of species -- often termed core areas -- are important not only for the biological diversity contained within them but also because they are important reservoirs supplying other sites with immigrants. Networks, consisting of several of these core areas, along with corridors or archipelagos of "stepping stones" that link them together, are given a particularly high priority for protection within landscape-level conservation. With regard to their connecting functions, even small or fairly degraded tracts of habitat may have some significance if they provide crucial links between larger, more viable sites.

In many types of landscape analysis, all species within a particular taxonomic group – e.g., all vertebrates – are of interest. Information on these groups is frequently obtained from museums and other institutions (e.g., universities, state biological surveys) with a taxonomic focus. The mission of these institutions too is to inventory the species present within a given geographic area, and particularly to describe the overall spatial distribution of particular taxonomic groups.

Range maps produced from museum data or taxonomically-focused surveys, along with habitat associations established for particular species, form the basis for the predictive modeling that is another key component of landscape analysis. Conservation significance for units of the landscape is based both on the type of vegetation present (as indicated by the cover map) and on predictions about the species that are likely to occur in association with that vegetation. Additional factors affecting animal distribution, such as the size of the habitat area and connections to other habitat units, are also taken into account in making these predictions. In some cases, site-specific data may also be incorporated, although for an analysis of an entire state or other large region, these data are not usually considered.

The final product of landscape analysis can take several forms. In an analysis of Florida's wildlife habitat conservation system (Cox, et al., 1994), the emphasis was placed on modeling the occurrence of declining species of vertebrates, as well as communities of rare plants and animals. In the National GAP Analysis Program (Scott and Jennings, 1997, 1998), the goal is to map both the land cover and predicted distributions for all vertebrate species across the country. In the Wildlands Project (Soule and Noss, 1998), the mission is "rewilding," the restoration of large wilderness areas based on the predicted distribution and spatial needs of large animals, particularly carnivores. In all cases, the distribution of the habitats and species of interest are examined for "gaps" in protection. Recommendations are made for landscape-level conservation design, incorporating core areas (major population strongholds or biodiversity "hot-spots"), buffers, and connectors.